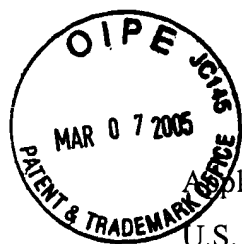


03-08-05

TFW

PATENT
454311-2231.1



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s) : Shi *et al.*
U.S. Serial No. : 10/706,892
Filing Date : November 13, 2004
For : SCREENING FOR WEST NILE VIRUS ANTIVIRAL THERAPY
Examiner : To Be Assigned
Art Unit : 1645

745 Fifth Avenue
New York, NY 10151

EXPRESS MAIL

Mailing Label Number: EV384276345US

Date of Deposit: March 7, 2005

I hereby certify that this paper or fee is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" Service under 37 CFR 1.10 on the date indicated above and is addressed to: **Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

Adam Ahmed

(Typed or printed name of person mailing paper or fee)

A. Ahmed

(Signature of person mailing paper or fee)

INFORMATION DISCLOSURE STATEMENT

Commissioner for Patents
P.O. Box 3 1450
Alexandria, VA 22313-1450

Sir:

The Examiner's attention is respectfully directed to the following documents set forth in the accompanying form PTO-1449, which is provided in duplicate. Copies of the cited documents are enclosed. Applicants request that the Examiner consider and make of record the documents cited herein and that a copy of the Form PTO-1449, initialed by the Examiner be returned to Applicants' attorneys.

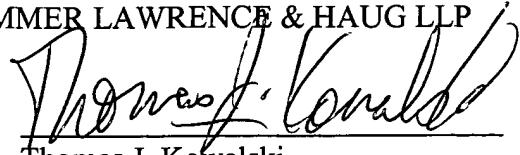
This Information Disclosure Statement is not a representation that the documents cited herein are considered most pertinent, or that a search has been undertaken, or that any of the cited documents are indeed prior art. The Examiner is invited to undertake an independent search.

As this Information Disclosure Statement is being submitted before receipt of an Office Action, it is believed that no fee is required. If, however a fee is due, the Director is authorized to charge any additionally required fee, or credit any overpayment, to deposit account 50-0320.

Respectfully submitted,

FROMMER LAWRENCE & HAUG LLP

By:

A handwritten signature in black ink, appearing to read "Thomas J. Kowalski", written over a horizontal line.

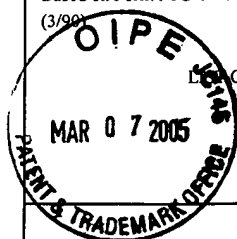
Thomas J. Kowalski

Reg. No. 32,147

T: (212) 588-0800

Based on Form PTO-1449

(3/98)



LIST OF REFERENCES CITED BY APPLICANT

(Use several sheets if necessary)

ATTY. DOCKET NO.

454311-2231.1

SERIAL NO.

10/706,892

APPLICANT

SHI et al

FILING DATE

11/13/03

GROUP

1645

OTHER PRIOR ART (Including Author, Title, Date, Pertinent Pages, Etc.)

AA	Ackermann M, Padmanabhan R. (2001) De novo synthesis of RNA by the dengue virus RNA-dependent RNA polymerase exhibits temperature dependence at the initiation but not elongation phase. J Biol Chem 2001 Oct 26;276(43):39926-37.
AB	Arias CF, Preugschat F, Strauss JH. (1993) Dengue 2 virus NS2B and NS3 form a stable complex that can cleave NS3 within the helicase domain. Virology 1993 Apr;193(2):888-99.
AC	Beasley, D.W.C. et al, (2001) International Conference on the West Nile Virus, New York Academy of Science Poster Section 1:5.
AD	Blackwell J.L., and Brinton M.A. (1995) BHK cell proteins that bind to the 3' stem-loop structure of the West Nile virus genome RNA. J Virol 1995 Sep;69(9):5650-8.
AE	Blackwell JL, Brinton MA. (1997) Translation elongation factor-1 alpha interacts with the 3' stem-loop region of West Nile virus genomic RNA. J Virol 71(9):6433-44.
AF	Brinton MA, Dispoto JH, (1988) Sequence and secondary structure analysis of the 5'-terminal region of flavivirus genome RNA. Virology 1988 Feb;162(2):290-9.
AG	Campbell MS, Pletnev AG: Infectious cDNA clones of Langat tickborne flavivirus that differ from their parent in peripheral neurovirulence. Virology (2000) 269(1):225-237.
AH	Cardosa, M.J., (1998) Dengue vaccine design: issues and challenges. Br Med Bull 1998;54(2):395-405.
AI	Chambers T.J., Hahn CS, Galler R, Rice CM (1990) Flavivirus genome organization, expression, and replication. Annu Rev Microbiol 44:649-88.
AJ	Chambers TJ, Grakoui A, Rice CM. (1991) Processing of the yellow fever virus nonstructural polypeptide: a catalytically active NS3 proteinase domain and NS2B are required for cleavages at dibasic sites. J Virol 1991 Nov;65(11):6042-50.
AK	Chambers TJ, Nestorowicz A, Amberg SM, Rice CM. (1993) Mutagenesis of the yellow fever virus NS2B protein: effects on proteolytic processing, NS2B-NS3 complex formation, and viral replication. J Virol 1993 Nov;67(11):6797-807.
AL	Diamond MS, Edgil D, Roberts TG, Lu B, Harris E. (2000) Infection of human cells by dengue virus is modulated by different cell types and viral strains. J Virol 2000 Sep;74(17):7814-23.
AM	De Clercq, E. 1993. Antiviral agents: characteristic activity spectrum depending on the molecular target with which they interact. Advance Virus Res. 42:1-55.
AN	Ebel, G.D., Dupuis, A.P., Il, Ngo, K.A., Nicholas, D.C., Kaauffman, E.B., Johnes, S.A., Yound, D., Maffei, J., Shi, P.Y., Bernard, K.A., and Kramer L.D. (2001). Partial genetic characterization of West Nile virus strains, New York State, 2000. Emerg. Infect. Dis. 7:650-653.
AO	Falgout B, Miller RH, Lai CJ. (1993) Deletion analysis of dengue virus type 4 nonstructural protein NS2B: identification of a domain required for NS2B-NS3 protease activity. J Virol 1993 Apr;67(4):2034-42.
AP	Gray, N.K. and M. Wicker, (1998) Control of translation in animals, Annu. Rev. Cell Dev. Biol. 14: 399-458.
AQ	Guyatt KJ, Westaway EG, Khromykh AA. (2001) Expression and purification of enzymatically active recombinant RNA-dependent RNA polymerase (NS5) of the flavivirus Kunjin. J Virol Methods 2001 Mar;92(1):37-44.
AR	Hicks, B.W. <u>Green Fluorescent Protein: Applications and Protocols</u> , Vol. 83 of Methods in Cell Biology (2002).
AS	Heinz FX, Allison SL (2000) Structures and mechanisms in flavivirus fusion. Adv Virus Res 2000;55:231-69.
AT	Hellen CU, Witherell GW, Schmid M, Shin SH, Pestova TV, Gil A, Wimmer E. (1993) A cytoplasmic 57-kDa protein that is required for translation of picornavirus RNA by internal ribosomal entry is identical to the nuclear pyrimidine tract-binding protein. Proc Natl Acad Sci 90(16):7642-6.

EXAMINER

DATE CONSIDERED

* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Based on Form PTO-1449 (3/90)		ATTY. DOCKET NO. 454311-2231.1		SERIAL NO. 10/706,892	
LIST OF REFERENCES CITED BY APPLICANT (Use several sheets if necessary)		APPLICANT SHI et al			
		FILING DATE 11/13/03		GROUP 1645	
OTHER PRIOR ART (Including Author, Title, Date, Pertinent Pages, Etc.)					
	AA		Hubalek, Z., and J. Halouzka. (1999) West Nile fever--a reemerging mosquito-borne viral disease in Europe. <i>Emerg Infect Dis</i> 5(5):643-50.		
	AB		Hurrelbrink RJ, Nestorowicz A, McMinn PC: Characterization of Infectious Murray Valley encephalitis virus derived from a stably cloned genomelength cDNA. <i>J Gen Viral</i> (1999) 80(Pt 12):3115-3125.		
	AC		Jackson RJ, Kaminski A. (1995) Internal initiation of translation in eukaryotes: the picornavirus paradigm and beyond. <i>RNA</i> 1995 Dec;1(10):985-1000.		
	AD		Jang SK, Krausslich HG, Nicklin MJ, Duke GM, Palmenberg AC, Wimmer E. (1988) A segment of the 5' nontranslated region of encephalomyocarditis virus RNA directs internal entry of ribosomes during in vitro translation. <i>J Virol</i> 1988 Aug;62(8):2636-43.		
	AE		Jordan I, Briese T, Fischer N, Lau JY, Lipkin WI: Ribavirin inhibits West Nile virus replication and cytopathic effect in neural cells. <i>J Infect Dis</i> (2000) 182(4):1214-1217.		
	AF		Kapoor M, Zhang L, Mohan PM, Padmanabhan R: Synthesis and characterization of an Infectious dengue virus type-2 RNA genome (New Guinea C strain). <i>Gene</i> (1995) 162(2):175-180.		
	AG		Kaminski A, Hunt SL, Patton JG, Jackson RJ. (1995) Direct evidence that polypyrimidine tract binding protein (PTB) is essential for internal initiation of translation of encephalomyocarditis virus RNA. <i>RNA</i> 1995 Nov;1(9):924-38.		
	AH		Khromykh AA, Westaway EG: Completion of Kunjin virus RNA sequence and recovery of an Infectious RNA transcribed from stably cloned full-length cDNA. <i>J Virol</i> (1994) 68(7):4580-4588.		
	AI		Khromykh AA, Westaway EG: Subgenomic replicons of the flavivirus Kunjin: Construction and applications. <i>J Virol</i> (1997) 71(2):1497-1505.		
	AJ		Koonin EV. (1993) Computer-assisted identification of a putative methyltransferase domain in NS5 protein of flaviviruses and lambda 2 protein of reovirus. <i>J Gen Virol</i> 1993 Apr;74 (Pt 4):733-40.		
	AK		Kummerer BM, Rice CM. (2002) Mutations in the yellow fever virus nonstructural protein NS2A selectively block production of infectious particles. <i>J Virol</i> 2002 May;76(10):4773-84.		
	AL		Lai CJ, Zhao BT, Hod H, Bray M: Infectious RNA transcribed from stably cloned full-length cDNA of dengue type 4 virus. <i>Proc Natl Acad Sci USA</i> (1991) 88(12):5139-5143.		
	AM		Lanciotti RS, Roehrig JT, Deubel V, Smith J, Parker M, Steele K, Crise B, Volpe KE, Crabtree MB, Scherret JH, Hall RA, MacKenzie JS, Cropp CB, Panigrahy B, Ostlund E, Schmitt B, Malkinson M, Banet C, Weissman J, Komar N, Savage HM, Stone W, McNamara T, Gubler DJ. (1999) Origin of the West Nile virus responsible for an outbreak of encephalitis in the northeastern United States. <i>Science</i> 286(5448):2333-7.		
	AN		Lanciotti RS, Ebel GD, Deubel V, Kerst AJ, Murri S, Meyer R, Bowen M, McKinney N, Morrill WE, Crabtree MB, Kramer LD, Roehrig JT. (2002) Complete genome sequences and phylogenetic analysis of West Nile virus strains isolated from the United States, Europe, and the Middle East. <i>Virology</i> 298(1):96-105.		
	AO		Leda, R., <i>Methods in Molecular Biology</i> , Humana Press, v.165 (2001).		
	AP		Lindenbach, B.D. and C.M. Rice, <i>Fields Virology</i> , Fourth Edition, volume 1 D.M. Knipe and P.M. Howley, ed, Lippincott Williams and Wilkins, Philadelphia, PA.		
	AQ		Lindenbach BD, Rice CM. (1997) trans-Complementation of yellow fever virus NS1 reveals a role in early RNA replication. <i>J Virol</i> 1997 Dec;71(12):9608-17.		
	AR		Lindenbach BD, Rice CM. (1999) Genetic interaction of flavivirus nonstructural proteins NS1 and NS4A as a determinant of replicase function. <i>J Virol</i> 1999 Jun;73(6):4611-21.		
	AS		Lo, J.K., Tilgner, M., and Shi, P.Y. 2003. A potential high-throughput assay for screening inhibitors of West Nile virus replication. <i>J. Virol.</i> 77, 12901-12906.		
EXAMINER			DATE CONSIDERED		
* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.					

Based on Form PTO-1449 (3/90)		ATTY. DOCKET NO. 454311-2231.1		SERIAL NO. 10/706,892	
LIST OF REFERENCES CITED BY APPLICANT (Use several sheets if necessary)		APPLICANT SHI et al			
		FILING DATE 11/13/03		GROUP 1645	
OTHER PRIOR ART (Including Author, Title, Date, Pertinent Pages, Etc.)					
	AA		Mandl CW, Ecker M, Holzmann H, Kunz C, Heinz FX: Infectious cDNA clones of tick-borne encephalitis virus European subtype prototypic strain Neudoerfl and high virulence strain Hypr. J Gen Virol (1997) 78(Pt 5):1049-1057.		
	AB		McSharry JJ. (1994) Uses of flow cytometry in virology. Clin Microbiol Rev 1994 Oct;7(4):576-604.		
	AC		McSharry JJ. (2000) Analysis of virus-infected cells by flow cytometry. Methods 2000 Jul;21(3):249-57.		
	AD		Meerovitch K, Svitkin YV, Lee HS, Lejbkowitz F, Kenan DJ, Chan EK, Agol VI, Keene JD, Sonenberg N. (1993) La autoantigen enhances and corrects aberrant translation of poliovirus RNA in reticulocyte lysate J Virol 1993 Jul;67(7):3798-807.		
	AE		Monath, T. 2001. Prospects for development of a vaccine against the West Nile virus. Ann. N. Y. Acad. Sci. 951:1-12.		
	AF		Morrey JD, Smee DF, Sidwell RW, Tsang C: Identification of active antiviral compounds against a New York Isolate of West Nile virus. Antiviral Res (2002) 55(1):107-116.		
	AG		Muylaert IR, Chambers TJ, Galler R, Rice CM. (1996) Mutagenesis of the N-linked glycosylation sites of the yellow fever virus NS1 protein: effects on virus replication and mouse neurovirulence. Virology 1996 Aug 1;222(1):159-68.		
	AH		Muylaert IR, Galler R, Rice CM. (1997) Genetic analysis of the yellow fever virus NS1 protein: identification of a temperature-sensitive mutation which blocks RNA accumulation. J Virol 1997 Jan;71(1):291-8.		
	AI		Parham, P. <u>Immunology</u> New York, Garland Press (2000)		
	AJ		Pelletier J, Kaplan G, Racaniello VR, Sonenberg N. (1988) Cap-independent translation of poliovirus mRNA is conferred by sequence elements within the 5' noncoding region Mol Cell Biol 8(3):1103-12.		
	AK		Pelletier J, Kaplan G, Racaniello VR, Sonenberg N. (1998) Translational efficiency of poliovirus mRNA: mapping inhibitory cis-acting elements within the 5' noncoding region. J Virol 62(7):2219-27.		
	AL		Pestova TV, Shatsky IN, Fletcher SP, Jackson RJ, Hellen CU. (1998) A prokaryotic-like mode of cytoplasmic eukaryotic ribosome binding to the initiation codon during internal translation initiation of hepatitis C and classical swine fever virus RNAs. Genes Dev 12(1):67-83.		
	AM		Polo S, Ketner G, Levis R, Falgout 8: Infectious RNA transcripts from full-length dengue virus type 2 cDNA clones made in yeast. J Virol (1997) 71(7):5366-5374.		
	AN		Proutski V, Gould EA, Holmes EC. (1997) Secondary structure of the 3' untranslated region of flaviviruses: similarities and differences. Nucleic Acids Res 1997 Mar 15;25(6):1194-1202.		
	AO		Rauscher S, Flamm C, Mandl CW, Heinz FX, Stadler PF. (1997) Secondary structure of the 3'-noncoding region of flavivirus genomes: comparative analysis of base pairing probabilities. RNA 3(7):779-91.		
	AP		Rey FA, Heinz FX, Mandl C, Kunz C, Harrison SC (1995) The envelope glycoprotein from tick-borne encephalitis virus at 2 A resolution. Nature 1995 May 25;375(6529):291-8.		
	AQ		Rice CM, Lendxes EM, Eddy SR, Shin SJ, Sheets RL, Strauss JH: Nucleotide sequence of yellow fever virus: Implications for flavivirus gene expression and evolution. Science (1985) 229(4715):726-733.		
	AR		Shi, P. Y. 2002. Strategies for the identification of inhibitors of West Nile virus and other flaviviruses. Curr. Opin. Investig. Drugs. 3:1567-73.		
	AS		Shi, P. Y., E. B. Kauffman, P. Ren, A. Felton, J. H. Tai, A. P. Dupuis, 2nd, S. A. Jones, K. A. Ngo, D. C. Nicholas, J. Maffei, G. D. Ebel, K. A. Bernard, and L. D. Kramer. 2001. High-throughput detection of West Nile virus RNA. J. Clin. Microbiol. 39:1264-71.		
	AT		Shi, P. Y., M. Tilgner, and M. K. Lo. 2002. Construction and characterization of subgenomic replicons of New York strain of West Nile virus. Virology 296:219-233.		
EXAMINER			DATE CONSIDERED		
* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.					

Based on Form PTO-1449 (3/90)		ATTY. DOCKET NO. 454311-2231.1		SERIAL NO. 10/706,892	
LIST OF REFERENCES CITED BY APPLICANT (Use several sheets if necessary)		APPLICANT SHI et al			
		FILING DATE 11/13/03		GROUP 1645	
OTHER PRIOR ART (Including Author, Title, Date, Pertinent Pages, Etc.)					
	AA		Shi, P. Y., M. Tilgner, M. K. Lo, K. A. Kent, and K. A. Bernard. 2002. Infectious cDNA clone of the epidemic west nile virus from New York City. J. Virol. 76:5847-56.		
	AB		Sumiyoshi H, Hoke CH, Trent DW: Infectious Japanese encephalitis virus RNA can be synthesized from In vitro-ligated cDNA templates. J Virol (1992) 66(9):5425-5431.		
	AC		Svitkin YV, Meerovitch K, Lee HS, Dholakia JN, Kenan DJ, Agol VI, Sonenberg N. (1994) Internal translation initiation on poliovirus RNA: further characterization of La function in poliovirus translation in vitro. J Virol 1994 Mar;68(3):1544-50.		
	AD		Tan BH, Fu J, Sugrue RJ, Yap EH, Chan YC, Tan YH. (1996) Recombinant dengue type 1 virus NS5 protein expressed in Escherichia coli exhibits RNA-dependent RNA polymerase activity. Virology 1996 Feb 15;216(2):317-25.		
	AE		Wu S-F, Lee CJ, Liao C-L, Dwek R, Zitzmann N, Lin Y-L: Antiviral effects of an iminosugar derivative on flavivirus Infections. J Virol (2002) 76(8):3596-3604.		
	AF		Yamshchikov VF, Wangler G, Perelygin AA, Brinton MA, Compans RW: An infectious clone of the West Nile flavivirus. Virology (2001) 281(2):294-304.		
	AG				
	AH				
	AI				
	AJ				
	AK				
	AL				
	AM				
	AN				
	AO				
	AP				
	AQ				
	AR				
	AS				
	AT				
EXAMINER			DATE CONSIDERED		
* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.					